

reactor or a multi-tubular reactor, which can efficiently remove the heat of reaction, is used for reforming dimethyl ether, which is an exothermic reaction.

In the method for producing town gas, [of claim 6] as a sixth claim of invention, [there can be increased] the heating value per unit volume of the reformed gas can be increased since carbon dioxide, which is an incombustible gas, is removed from the reformed gas.

In the method for producing town gas, [of claim 7] as a seventh claim of invention, [there can be stabilized] the operation of the producing process of town gas can be stabilized since the proven method is adopted for the removal of carbon dioxide.

In the method for producing town gas, [of claim 8] as an eighth claim of invention, [there can be increased] the heating value of the reformed gas can be increased since hydrogen, carbon monoxide and carbon dioxide, which are contained in the reformed gas, are methanized [besides] and carbon dioxide is removed from the reformed gas.

In the method for producing town gas, [of claim 9] as a ninth claim of invention, the heating value of town gas as a final product, can be adapted to a predetermined value controlling quantity of carburant to add in the reformed gas. - -

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- - ABSTRACT

It is an object of this invention to provide a method for producing town gas, in which a sulfur component is not contained in the feed stock, so desulfurization facilities are unnecessary, and transport efficiency is higher, and extra energy is not consumed on the evaporation process of feed stock, and which is suitable for small or medium-sized businesses [can] to carry out. [As a means to solve. dimethyl] Dimethyl ether is used as feed stock. After evaporating dimethyl ether, the dimethyl ether is heated under the existence of steam within a

heating furnace 33. The heated dimethyl ether is led into a tubular reforming reactor filled with catalyst for reforming. Dimethyl ether comes into contact with the catalyst within the reactor and reformed in gas containing carbon dioxide, carbon monoxide, hydrogen and mainly methane [mainly]. Next, the reformed gas is led into a pressure-swinging [adsobing] adsorbing apparatus 37, so that carbon dioxide is separated from the reformed gas. [And then] Then the reformed gas is led into a methanation reactor 38, so that hydrogen, carbon monoxide and [carabon] carbon dioxide, which are contained in the reformed gas, are methanized. Finally, the heating value of the reformed gas is controlled by adding carburant which is dimethyl ether so as to [change] transform into tow gas. - -